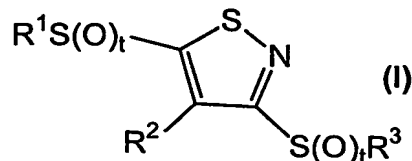


## WHAT IS CLAIMED IS:

1. The use of a compound of formula (I):



wherein:

each  $t$  is independently 0, 1 or 2;

$R^1$  and  $R^3$  are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl,  $-R^4-N=N-O-R^5$ ,  $-N(R^6)_2$  or heterocyclalkyl;

$R^2$  is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro,  $-R^4-N=N-O-R^5$ ,  $-OR^6$ ,  $-C(O)OR^6$ ,  $-N(R^6)_2$ ,  $-C(O)N(R^6)_2$ ,  $-N(R^6)C(O)OR^5$ ,  $-N(R^6)C(O)N(R^6)_2$ , heterocycl or heterocyclalkyl;

$R^4$  is a bond or a straight or branched alkylene or alkenylene chain;

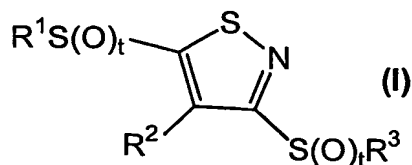
each  $R^5$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each  $R^6$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof;

for treating cancer in a mammal.

2. The use of a compound of formula (I):



wherein:

each  $t$  is independently 0, 1 or 2;

$R^1$  and  $R^3$  are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl,  $-R^4-N=N-O-R^5$ ,  $-N(R^6)_2$  or heterocyclalkyl;

$R^2$  is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro,  $-R^4-N=N-O-R^5$ ,  $-OR^6$ ,  $-C(O)OR^6$ ,  $-N(R^6)_2$ ,  $-C(O)N(R^6)_2$ ,  $-N(R^6)C(O)OR^5$ ,  $-N(R^6)C(O)N(R^6)_2$ , heterocycl or heterocyclalkyl;

$R^4$  is a bond or a straight or branched alkylene or alkenylene chain;

each  $R^5$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each  $R^6$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

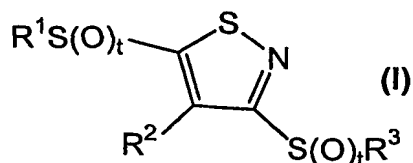
as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof;

for treating inflammation in a mammal.

3. The use according to Claim 1 or 2 wherein the cancer or inflammation is associated with hyperproliferation or tissue remodelling or repair.

4. The use according to Claim 1 or 2 wherein the cancer or inflammation is associated with the activity of PTPN12.

5. The use of a compound of formula (I)



wherein:

each  $t$  is independently 0, 1 or 2;

$R^1$  and  $R^3$  are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl,  $-R^4-N=N-O-R^5$ ,  $-N(R^6)_2$  or heterocyclalkyl;

$R^2$  is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro,  $-R^4-N=N-O-R^5$ ,  $-OR^6$ ,  $-C(O)OR^6$ ,  $-N(R^6)_2$ ,  $-C(O)N(R^6)_2$ ,  $-N(R^6)C(O)OR^5$ ,  $-N(R^6)C(O)N(R^6)_2$ , heterocyclyl or heterocyclalkyl;

$R^4$  is a bond or a straight or branched alkylene or alkenylene chain;

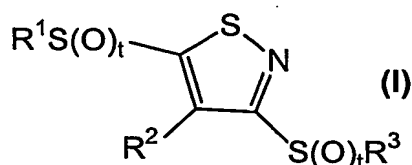
each  $R^5$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each  $R^6$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof;

for the treatment of hyperproliferative disorders in a mammal.

6. The use of a compound of formula (I):



wherein:

each  $t$  is independently 0, 1 or 2;

$R^1$  and  $R^3$  are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl,  $-R^4-N=N-O-R^5$ ,  $-N(R^6)_2$  or heterocyclalkyl;

$R^2$  is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro,

$-R^4-N=N-O-R^5$ ,  $-OR^6$ ,  $-C(O)OR^6$ ,  $-N(R^6)_2$ ,  $-C(O)N(R^6)_2$ ,  $-N(R^6)C(O)OR^5$ ,  $-N(R^6)C(O)N(R^6)_2$ , heterocyclyl or heterocyclalkyl;

$R^4$  is a bond or a straight or branched alkylene or alkenylene chain;

each  $R^5$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

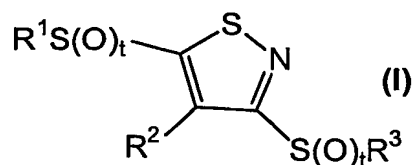
each  $R^6$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof;

for the treatment of a disorder or condition associated with hyperproliferation and tissue remodelling or repair in a mammal.

7. The use according to any one of Claims 1-6 wherein the mammal is a human.

8. The use of a compound of formula (I):



wherein:

each  $t$  is independently 0, 1 or 2;

$R^1$  and  $R^3$  are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl,  $-R^4-N=N-O-R^5$ ,  $-N(R^6)_2$  or heterocyclalkyl;

$R^2$  is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro,  $-R^4-N=N-O-R^5$ ,  $-OR^6$ ,  $-C(O)OR^6$ ,  $-N(R^6)_2$ ,  $-C(O)N(R^6)_2$ ,  $-N(R^6)C(O)OR^5$ ,  $-N(R^6)C(O)N(R^6)_2$ , heterocyclyl or heterocyclalkyl;

$R^4$  is a bond or a straight or branched alkylene or alkenylene chain;

each R<sup>5</sup> is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each R<sup>6</sup> is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof,

wherein the use comprises administering the compound of formula (I) to a mammalian cell and the compound of formula (I) is capable of inhibiting the activity of PTPN12 within the mammalian cell.

9. The use according to Claim 8 wherein the mammalian cell is treated *in vitro*.

10. The use according to Claim 8 wherein the mammalian cell is treated *in vivo*.

11. The use according to Claim 8 wherein the inhibition of activity results in a reduction of cell adhesion.

12. The use according to Claim 8 wherein the inhibition of activity results in a reduction of cell division.

13. The use according to Claim 8, wherein the inhibition of activity results in control of tumor growth.

14. The use according to Claim 8 wherein the inhibition of activity results in control of lymphocyte activation.

15. A pharmaceutical composition useful in treating cancer or inflammation in a human, wherein the pharmaceutical composition comprises a pharmaceutically acceptable carrier, diluent or excipient and a compound of formula (II):



wherein:

each  $t$  is independently 0, 1 or 2;

$R^1$  and  $R^3$  are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl,  $-R^4-N=N-O-R^5$ ,  $-N(R^6)_2$  or heterocyclalkyl;

$R^2$  is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, nitro,  $-R^4-N=N-O-R^5$ ,  $-OR^6$ ,  $-C(O)OR^6$ ,  $-N(R^6)_2$ ,  $-C(O)N(R^6)_2$ ,  $-N(R^6)C(O)OR^5$ ,  $-N(R^6)C(O)N(R^6)_2$ , heterocycl or heterocyclalkyl;

$R^4$  is a bond or a straight or branched alkylene or alkenylene chain;

each  $R^5$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each  $R^6$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

provided that when  $t$  is 0 and  $R^1$  and  $R^3$  are both methyl,  $R^2$  can not be  $-C(O)OH$ ,  $-C(O)NH_2$ , carboxymethyl or unsubstituted phenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof.

16. The use or pharmaceutical composition of any one of Claims 1-15 wherein the  $R^1$  substituent of the compound of formula (I) or the compound of formula (II) is alkyl or alkenyl.

17. The use or pharmaceutical composition of any one of Claims 1-15 wherein the  $R^1$  substituent of the compound of formula (I) or the compound of formula (II) is aryl, aralkyl or aralkenyl.

18. The use or pharmaceutical composition of any one of Claims 1-15 wherein the  $R^1$  substituent of the compound of formula (I) or the compound of formula (II) is cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl.

19. The use or pharmaceutical composition of any one of Claims 1-15 wherein the  $R^1$  substituent of the compound of formula (I) or the compound of formula (II) is haloalkyl, haloalkenyl, haloalkoxyalkyl or haloalkoxyalkenyl.

20. The use or pharmaceutical composition of any one of Claims 1-15 wherein the  $R^1$  substituent of the compound of formula (I) or the compound of formula (II) is  $-R^4-N=N-O-R^5$ .

21. The use or pharmaceutical composition of any one of Claims 1-15 wherein the  $R^1$  substituent of the compound of formula (I) or the compound of formula (II) is  $-N(R^6)_2$ .

22. The use or pharmaceutical composition of any one of Claims 1-15 wherein the  $R^1$  substituent of the compound of formula (I) or the compound of formula (II) is heterocyclylalkyl.

23. The use or pharmaceutical composition of any one of Claims 1-22 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is hydrogen, alkyl or alkenyl.

24. The use or pharmaceutical composition of any one of Claims 1-22 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is aryl, aralkyl or aralkenyl.

25. The use or pharmaceutical composition of any one of Claims 1-22 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl.

26. The use or pharmaceutical composition of any one of Claims 1-22 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is halo, haloalkyl or haloalkenyl.

27. The use or pharmaceutical composition of any one of Claims 1-22 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is nitro or  $-R^4-N=N-O-R^5$ .

28. The use or pharmaceutical composition of any one of Claims 1-22 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is  $-OR^6$ .

29. The use or pharmaceutical composition of any one of Claims 1-22 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is  $-C(O)OR^6$ .

30. The use or pharmaceutical composition of any one of Claims 1-22 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is  $-N(R^6)_2$ .

31. The use or pharmaceutical composition of any one of Claims 1-22 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is  $-C(O)N(R^6)_2$  or  $-N(R^6)C(O)OR^5$ .

32. The use or pharmaceutical composition of any one of Claims 1-22 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is heterocyclyl or heterocyclylalkyl.

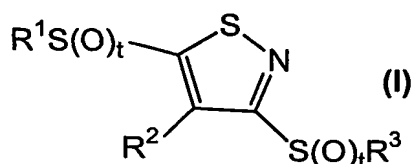


33. The use or pharmaceutical composition of any one of Claims 1-32 wherein t is 0.

34. The use or pharmaceutical composition of any one of Claims 1-32 wherein t is 1.

35. The use or pharmaceutical composition of any one of Claims 1-32 wherein t is 2.

36. A method of treating cancer in a mammal, which method comprises administering to the mammal in need thereof a therapeutically effective amount of a compound of formula (I):



wherein:

each t is independently 0, 1 or 2;

R¹ and R³ are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl, -R⁴-N=N-O-R⁵, -N(R⁶)₂ or heterocyclalkyl;

R² is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro, -R⁴-N=N-O-R⁵, -OR⁶, -C(O)OR⁶, -N(R⁶)₂, -C(O)N(R⁶)₂, -N(R⁶)C(O)OR⁵, -N(R⁶)C(O)N(R⁶)₂, heterocycl or heterocyclalkyl;

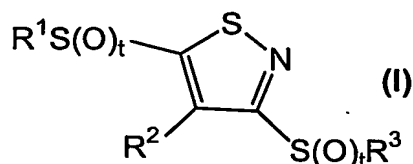
R⁴ is a bond or a straight or branched alkylene or alkenylene chain;

each R⁵ is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each R⁶ is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof.

37. A method of treating inflammation in a mammal, which method comprises administering to the mammal in need thereof a therapeutically effective amount of a compound of formula (I):



wherein:

each  $t$  is independently 0, 1 or 2;

$R^1$  and  $R^3$  are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl,  $-R^4-N=N-O-R^5$ ,  $-N(R^6)_2$  or heterocyclalkyl;

$R^2$  is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro,  $-R^4-N=N-O-R^5$ ,  $-OR^6$ ,  $-C(O)OR^6$ ,  $-N(R^6)_2$ ,  $-C(O)N(R^6)_2$ ,  $-N(R^6)C(O)OR^5$ ,  $-N(R^6)C(O)N(R^6)_2$ , heterocycl or heterocyclalkyl;

$R^4$  is a bond or a straight or branched alkylene or alkenylene chain;

each  $R^5$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

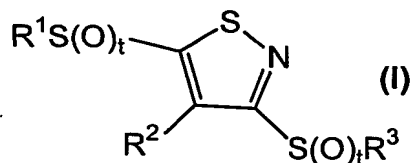
each  $R^6$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof.

38. The method according to any one of Claim 36 or 37 wherein the cancer or inflammation is associated with hyperproliferation or tissue remodelling or repair.

39. The method according to any one of Claim 36 or 37 wherein the cancer or inflammation is associated with the activity of PTPN12.

40. A method of treating hyperproliferative disorders in a mammal, which method comprises administering to the mammal in need thereof a therapeutically effective amount of a compound of formula (I)



wherein:

each  $t$  is independently 0, 1 or 2;

$R^1$  and  $R^3$  are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl,  $-R^4-N=N-O-R^5$ ,  $-N(R^6)_2$  or heterocyclalkyl;

$R^2$  is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro,  $-R^4-N=N-O-R^5$ ,  $-OR^6$ ,  $-C(O)OR^6$ ,  $-N(R^6)_2$ ,  $-C(O)N(R^6)_2$ ,  $-N(R^6)C(O)OR^5$ ,  $-N(R^6)C(O)N(R^6)_2$ , heterocycl or heterocyclalkyl;

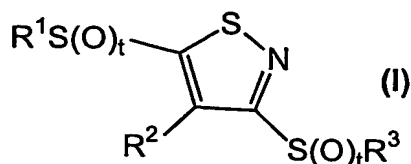
$R^4$  is a bond or a straight or branched alkylene or alkenylene chain;

each  $R^5$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each  $R^6$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof.

41. A method of treating a mammal having a disorder or condition associated with hyperproliferation and tissue remodelling or repair, wherein said method comprises administering to the mammal having the disorder or condition a therapeutically effective amount of a compound of formula (I):



wherein:

each  $t$  is independently 0, 1 or 2;

$R^1$  and  $R^3$  are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl,  $-R^4-N=N-O-R^5$ ,  $-N(R^6)_2$  or heterocyclalkyl;

$R^2$  is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro,  $-R^4-N=N-O-R^5$ ,  $-OR^6$ ,  $-C(O)OR^6$ ,  $-N(R^6)_2$ ,  $-C(O)N(R^6)_2$ ,  $-N(R^6)C(O)OR^5$ ,  $-N(R^6)C(O)N(R^6)_2$ , heterocycl or heterocyclalkyl;

$R^4$  is a bond or a straight or branched alkylene or alkenylene chain;

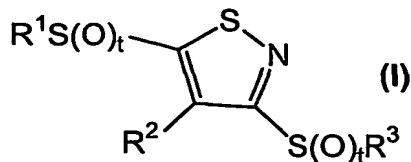
each  $R^5$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each  $R^6$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof.

42. The method according to any one of Claims 36-41 wherein the mammal is a human.

43. A method of treating a mammalian cell with a compound of formula (I):



wherein:

each  $t$  is independently 0, 1 or 2;

$R^1$  and  $R^3$  are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl,  $-R^4-N=N-O-R^5$ ,  $-N(R^6)_2$  or heterocyclalkyl;

$R^2$  is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro,  $-R^4-N=N-O-R^5$ ,  $-OR^6$ ,  $-C(O)OR^6$ ,  $-N(R^6)_2$ ,  $-C(O)N(R^6)_2$ ,  $-N(R^6)C(O)OR^5$ ,  $-N(R^6)C(O)N(R^6)_2$ , heterocycl or heterocyclalkyl;

$R^4$  is a bond or a straight or branched alkylene or alkenylene chain;

each  $R^5$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each  $R^6$  is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof,

wherein the method comprises administering the compound of formula (I) to a mammalian cell and the compound of formula (I) is capable of inhibiting the activity of PTPN12 within the mammalian cell.

44. The method of Claim 43 wherein the mammalian cell is treated *in vitro*.

45. The method of Claim 43 wherein the mammalian cell is treated *in vivo*.

46. The method of Claim 43 wherein the inhibition of activity results in a reduction of cell adhesion.

47. The method of Claim 43 wherein the inhibition of activity results in a reduction of cell division.

48. The method of Claim 43, wherein the inhibition of activity results in a reduction of cell migration.

49. The method of Claims 43, wherein the inhibition of activity results in control of tumor growth.

50. The method of Claims 43 wherein the inhibition of activity results in control of lymphocyte activation.

51. The method of any one of Claims 36-50 wherein the R<sup>1</sup> substituent of the compound of formula (I) or the compound of formula (II) is alkyl or alkenyl.

52. The method of any one of Claims 36-50 wherein the R<sup>1</sup> substituent of the compound of formula (I) or the compound of formula (II) is aryl, aralkyl or aralkenyl.

53. The method of any one of Claims 36-50 wherein the R<sup>1</sup> substituent of the compound of formula (I) or the compound of formula (II) is cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl.

54. The method of any one of Claims 36-50 wherein the R<sup>1</sup> substituent of the compound of formula (I) or the compound of formula (II) is haloalkyl, haloalkenyl, haloalkoxyalkyl or haloalkoxyalkenyl.

55. The method of any one of Claims 36-50 wherein the  $R^1$  substituent of the compound of formula (I) or the compound of formula (II) is  $-R^4-N=N-O-R^5$ .

56. The method of any one of Claims 36-50 wherein the  $R^1$  substituent of the compound of formula (I) or the compound of formula (II) is  $-N(R^6)_2$ .

57. The method of any one of Claims 36-50 wherein the  $R^1$  substituent of the compound of formula (I) or the compound of formula (II) is heterocyclalkyl.

58. The method of any one of Claims 36-57 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is hydrogen, alkyl or alkenyl.

59. The method of any one of Claims 36-57 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is aryl, aralkyl or aralkenyl.

60. The method of any one of Claims 36-57 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl.

61. The method of any one of Claims 36-57 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is halo, haloalkyl or haloalkenyl.

62. The method of any one of Claims 36-57 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is nitro or  $-R^4-N=N-O-R^5$ .

63. The method of any one of Claims 36-57 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is  $-OR^6$ .

64. The method of any one of Claims 36-57 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is  $-C(O)OR^6$ .

65. The method of any one of Claims 36-57 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is  $-N(R^6)_2$ .

66. The method of any one of Claims 36-57 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is  $-C(O)N(R^6)_2$  or  $-N(R^6)C(O)OR^5$ .

67. The method of any one of Claims 36-57 wherein the  $R^2$  substituent of the compound of formula (I) or the compound of formula (II) is heterocyclyl or heterocyclylalkyl.

68. The method of any one of Claims 36-67 wherein  $t$  is 0.

69. The method of any one of Claims 36-67 wherein  $t$  is 1.

70. The method of any one of Claims 36-67 wherein  $t$  is 2.